

Subnational long-term international migration methodology: July 2026

Description of the methodology used to produce our subnational long-term international migration estimates, using administrative data broken down by age, sex and local authority.

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1 . Overview

We published our [revised Long-term international migration \(LTIM\) estimates bulletin](#) in November 2025. These estimates incorporated improved methods and administrative data sources that were developed to better capture migration patterns, as described in our [Improving LTIM statistics, updating our methods and estimates article](#). For the first time, UK LTIM statistics no longer rely on survey data and are now produced using administrative data instead.

To align with these revisions, we have updated the methodology used to produce our subnational LTIM estimates. These estimates form the [international migration element](#) of change in the [cohort component method](#) used to produce annual population estimates.

In this context, "subnational estimates" refers to the disaggregation of national-level migration data into more detail. Specifically, national LTIM estimates for immigration and emigration are broken down by single year of age (between 0 to 90 years of age and over), sex and local authorities. These estimates are produced annually for the year ending (YE) June reference period for England, Scotland and Wales. This method was first implemented for the YE June 2025 reference year and a series produced back to the year after Census 2021.

In this supporting methodology article, "age" refers to single year of age.

Using this method:

- data for England and Wales are published from YE June 2022 by the Office for National Statistics (ONS) as part of the annual [Population estimates for England and Wales release](#)
- data for Scotland are published from YE June 2023 by National Records Scotland as part of their [population and migration publications](#)

Data for Northern Ireland are produced by the Northern Ireland Statistics and Research Agency using different data sources and method. For more information, see their [Long-Term International Migration Statistics estimates](#).

These data will also be used to inform national and subnational population projections.

2 . Methodology for producing subnational long-term international migration estimates

The national long-term international migration (LTIM) estimates provide the most robust estimate of [long-term international migration to and from the UK](#). The headline estimates do not include information on the geographic distribution of migrants within the UK because of the lack of available geographic indicators in some of the main data sources used.

In line with the national LTIM estimates, we use the United Nations-recommended definition of a long-term international migrant: a person who moves to a country other than that of their usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes their new country of usual residence.

To produce subnational estimates, we assume that:

- wider administrative data sources can provide insight into where migrants are located across the UK
- multiple administrative data sources can be used to improve coverage of different population groups (for example, working-age adults, children and students)
- migrants can be allocated to local areas proportionally, using the best available information from these administrative sources
- adjustments can be applied to account for known data limitations and to ensure consistency with national LTIM estimates

This methodology produces immigration and emigration estimates for each age, sex and local authority in England, Scotland and Wales. Differences in population coverage for different administrative data sources means that we process data separately for non-British and British nationals to produce an overall estimate.

Estimates for non-British nationals are derived from two subgroups:

- EU+, which includes all current EU member states (see [Section 8: Definitions](#), plus Norway, Iceland, Liechtenstein, and Switzerland
- Non-EU+, which covers all other countries, including the rest of Europe not classified under EU+

Estimates for British nationals aim to represent the total number of individuals holding a form of British nationality who have immigrated to or emigrated from the UK. For our definition of a British national, see our [Long-term international migration, provisional bulletin](#).

Total subnational estimates

The non-British and British estimates are combined to produce total immigration and emigration estimates by age, sex and local authority for England, Scotland and Wales. The methods used to calculate the non-British and British portions of the total estimates are outlined in this article and in Figure 1, alongside the datasets used for each group.

Figure 1 provides an overview of the steps involved in the two methods and should be read from top to bottom. It shows steps that are specific to each method ("Non-British method only" and "British method only"), while the boxes spanning both columns represent steps that are common to both methods. The methods are described in more detail in the relevant sections of this supporting methodology article. Estimates are not published separately by nationality group because of the small numbers involved, and to help protect confidentiality.

Figure 1: Subnational long-term international migration estimates method process

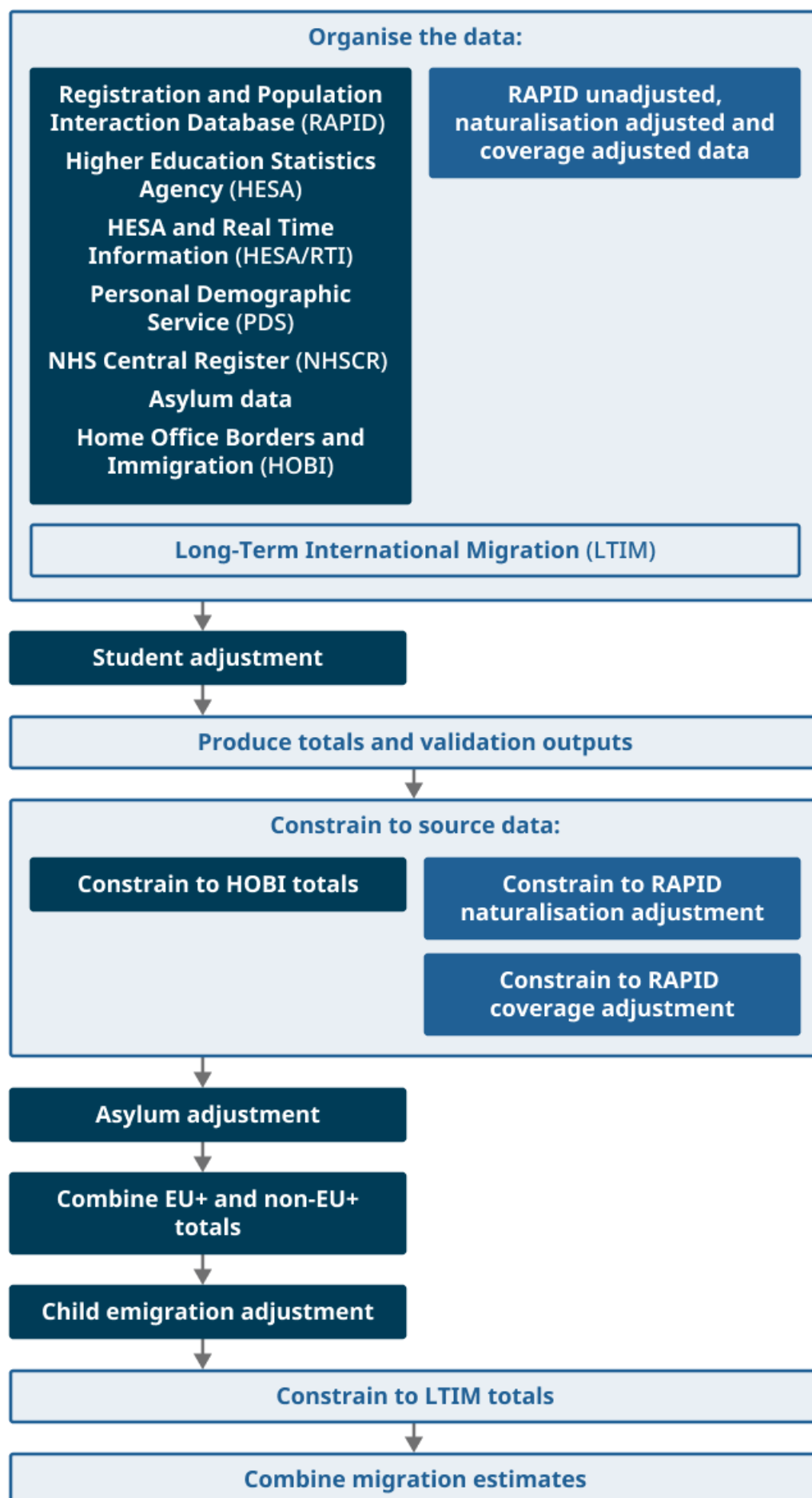
Methods used to produce the non-British and British components of subnational international migration estimates

Key:

■ Non-British method only

□ Shared steps

■ British method only



Protecting confidentiality

Input data used to produce the subnational estimates are aggregated data by age, sex and local authority. The methodology does not link or track individuals across data sources, and no personal identifiers are used when data sources are combined. Instead, it combines multiple sources of aggregated data and makes several assumptions and adjustments; estimates of small counts should not be assumed to refer to specific individuals. Estimates are rounded to at least the nearest whole number.

This supporting methodology article aims to clearly outline the data used and method limitations to assist users of these data. Estimates may be reviewed for disclosure and controls may be applied before publication where data are very sparse.

For more information on how we protect sensitive data, see [Our Data Strategy webpage](#).

Limitations

Limitations affect both the British and non-British data and methods that are used to estimate migrants. Limitations that are specific to each method are described in [Section 3: Method for non-British nationals estimates](#) and [Section 4: Method for British nationals estimates](#).

There are inherent limitations involved in the use of administrative data that will affect the overall estimates.

Timeliness

We make best use of the most recent and most suitable data available at the time of processing. As a result, trade-offs are sometimes needed between data timeliness, quality and suitability.

Coverage issues

Administrative data may have coverage limitations, as they will only include individuals or events that interact with the specific administrative system. For example, the Registration and Population Interaction Database (RAPID) is based on people with a National Insurance number, and the Personal Demographic Service (PDS) is based on people with an NHS number – these sources will not include people who do not interact with these systems. As a result, zero cells in the data may not represent true zeros.

Time lag issues

Administrative data can also be prone to time lags, as there is often delays between an event occurring, the information being recorded by administrative systems, and the data being processed and made available for analysis. For example, PDS data relies on GP registration activity. We know some population groups may not promptly register with GPs when they move, and most people do not inform their GP if they are leaving the country. These lags may affect the estimated geographic distribution, particularly following changes in immigration policy or other migration-related events.

Definition differences across data sources

The LTIM migration definition cannot be applied consistently across all data sources. In some sources, migrants are identified using evidence that a person is living, studying or interacting with services in the UK, while in others, migration is measured through movements into or out of the country. As these data were originally collected for operational, rather than statistical, purposes, they are used as proxies for migration and do not always align fully with the official LTIM definition.

Reference period alignment

Where possible, we align the reference period of the data sources as closely as possible to the reporting year (year ending (YE) June). However, not all data sources are available for the same reference period. For example, the RAPID data reference period is for the tax year (YE March). This may affect how well the input data reflect migration patterns during the target period.

Geographic variation

The estimates may not fully capture geographic variation because demographic profiles differ across local authorities, compared with the national estimates. This may affect how accurately UK-level patterns are distributed to local areas when we constrain to age and sex in the source data (Figure 1).

Quality assurance

Quality assurance (QA) is carried out throughout the production of the subnational LTIM estimates to ensure that the outputs are robust, internally consistent, and align with published national LTIM estimates. QA activities are undertaken at each stage of the disaggregation process. They include:

- input data checks
- processing validation
- local-authority-level reviews
- national-level consistency checks

All input datasets are subject to validation before being used in the methodology. These checks confirm that the data have been loaded correctly, contain the expected coverage, and are consistent with previously published sources, where appropriate. Processing checks are then carried out throughout the production process to ensure that calculations are implemented correctly and that outputs are produced as intended. Additional validation ensures that the distributions derived from administrative data remain consistent with the source data used in the methodology.

Quality assurance at the local-authority level focuses on reviewing the age and sex distributions that are produced and identifying any unexpected patterns or anomalies. At the national level, outputs are reviewed to verify that aggregated local authority estimates reconcile to the published national LTIM estimates. Year-on-year changes are reviewed, and where appropriate, estimates are compared with previously published data or other available sources to assess whether trends are plausible and consistent over time, and to identify any unusual patterns.

3 . Method for non-British nationals estimates

Data sources

To produce EU+ and non-EU+ subnational estimates, eight different data sources are used. These can be grouped into two categories: distribution data and count data.

Distribution data determine the geographical and demographic distribution of migrants. Distribution data sources include:

- the Registration and Population Interaction Database (RAPID)
- data from the Higher Education Statistics Agency (HESA)
- combined HESA and Real Time Information (RTI) (HESA/RTI)
- the Personal Demographic Service (PDS)
- the NHS Central Register (NHSCR)
- asylum data

Count data provide the overall number of migrants to be distributed across local authorities. Count data sources include:

- data from Home Office Borders and Immigration (HOBI)
- asylum data
- relevant published national long-term international migration (LTIM) estimates

Registration and Population Interaction Database

We use the Department for Work and Pensions's (DWP's) RAPID to identify EU+ and non-EU+ nationals aged 18 years and over who appear to have arrived in, or left, the UK, based on patterns of activity. RAPID is an administrative dataset containing information on people with a National Insurance number (NINo) and their interactions with the UK tax and benefits systems. It provides records of employment and benefit activity; this allows us to observe people's actual engagement with UK systems, rather than relying on their stated migration intentions. Sustained activity over at least 12 months is treated as evidence of long-term immigration and sustained absence of activity is treated as evidence of emigration.

Bespoke aggregate data tables are created for disaggregation. These are based on the RAPID migration data for long-term immigration and emigration by age, sex and local authority of the last local authority in which a person is registered. These data are updated once a year for the latest tax year.

For more information on the use of RAPID data in our migration estimates, see our [Implementing new methods for estimating the international migration of British nationals, progress update: November 2025 article](#).

Higher Education Statistics Agency

HESA student records are an important data source used in the production of the subnational LTIM estimates. The dataset contains information on higher education students who are studying at UK institutions. It is used to derive local authority distributions for international students aged 18 years and over who are in education. Specifically, the data are used to address known under-coverage of students within RAPID, helping to ensure that international students are allocated more accurately across local areas.

For inclusion in the LTIM subnational methodology, the HESA data are processed to retain active overseas-domiciled students who:

- are in their first or foundation year of study
- have started their course within the relevant academic year
- are studying in the UK
- are enrolled on courses lasting more than one year

This is in line with the LTIM definition. UK nationals and students studying mainly outside the UK are excluded.

For emigration estimates, we add in people who are expected to leave during the relevant reference year. Following processing, the data are aggregated by age, sex, local authority, and nationality group (EU+ or non-EU+, excluding unknown). The resulting distributions are used within the subnational estimation process to improve the geographic allocation of international students. These data are updated annually.

For more information, see our latest [Reason for international migration, international students update: February 2026 article](#).

Higher Education Statistics Agency and Real Time Information dataset

The HESA/RTI dataset is a linked dataset that we created to calculate the proportion of students in employment in each local authority, broken down by nationality group (EU or non-EU). These data are used in the subnational estimates to adjust HESA data and reduce the risk of double counting working students between HESA and RAPID. The current method analyses a cohort up to the 2018/2019 academic year. It uses students' interactions with HM Revenue and Customs's (HMRC's) Pay As you Earn (PAYE) system to estimate the proportion that are assumed to appear in RAPID. The results are broken down by domicile group (EU and non-EU).

Several limitations affect the HESA/RTI dataset and these are reported in the Non-British nationals method limitations subsection of this section.

Personal Demographic Service (England and Wales)

The PDS is a central NHS England system that contains demographic information for people using health and care services. For the disaggregation of national LTIM headlines, the PDS is longitudinally linked over time. It is used to identify proxy indicators of immigration and emigration based on GP registrations following arrival from abroad, and subsequent records associated with departure from the UK. The RAPID migration data contains limited information for children, so these data provide local authority distributions for non-British national children, which helps to allocate national LTIM totals to local areas.

PDS does not contain nationality information, so British nationals are excluded through linkage to birth registration and Census 2021 data using NHS numbers. The resulting outputs provide aggregate data tables by age, sex, and local authority that are used within the LTIM disaggregation process.

Several limitations affect PDS data and these are explained in the Non-British nationals method limitations subsection of this section.

NHS Central Register (Scotland)

The NHSCR contains basic demographic details of everyone who was born or died in Scotland and is or has been on the list of a GP in Scotland. The NHSCR is used in the subnational estimates to obtain local authority distributions for children aged between 0 and 18 years in Scotland. This allows us to account for information on children that is missing from the RAPID migration data. National Records Scotland (NRS) provides aggregate data for those aged 0 to 18 years annually through a bespoke data sharing agreement.

NHSCR immigration is based on first registration with NHS Scotland and emigration is based on an embarkation code, which is created when the individual gives notification that they are leaving the country.

For more information, see NRS's [NHS Central Register webpage](#).

Home Office Borders and Immigration data

We use HOBI data to produce the national LTIM immigration and emigration estimates for non-EU+ and EU+, as described in our [Provisional long-term international migration estimates: technical user guide](#). Data aggregated by age and sex are created to use in the subnational estimates.

HOBI data are derived from a linked database that combines data from Home Office systems and data relating to their immigration status to build travel histories of an individual's travel into or out of the UK. For more information, see our [Long-term international migration: quality assuring administrative data article](#).

Asylum and resettled refugee data

ONS uses [data published by the Home Office](#) by age, sex and local authority to add the total number of asylum applicants and resettlement scheme arrivals to the international immigration estimates. For more information see the [Provisional long-term international migration estimates: technical user guide](#).

Long-term international migration national estimates

British and non-British nationals LTIM estimates are produced using HOBI, asylum and resettlement, RAPID, and adjusted HESA data. Estimates of immigration, emigration, and net migration to and from the UK are broken down by nationality, reason for migration, and other demographic factors. British, EU and non-EU LTIM estimates are required to constrain the subnational estimates, which ensures consistency between UK and subnational estimates. For more information, see our [Long-term international migration, provisional: year ending December 2025 bulletin](#).

Non-British migration method

The method for producing non-British migration estimates can be broadly divided into nine steps.

The process only uses aggregate data by age, sex and local authority for the broad EU+ and non-EU+ nationality groups, where available (Figure 1).

Step 1: Organise the data

This step standardises the structure of all data sources, ensuring consistent column names, variable coding and data types. It also involves retaining only complete cases and updating local authority codes to align with requirements.

Step 2: Student adjustment

This step adjusts the HESA student migration data for each local authority, age and sex group by removing the estimated proportion of students in employment, based on local authority and nationality group. This reduces the likelihood of double counting students who may appear in both the RAPID and HESA datasets. The remaining students are the estimate of non-working students.

Step 3: Produce totals and validation outputs

This step aggregates all data sources (non-working students, RAPID, PDS, and NHSCR) into EU+ and non-EU+ groups, where possible. Quality checks are carried out to ensure that no input data are lost during processing.

Step 4: Constrain to Home Office Borders and Immigration totals

Using all data sources from Step 3, we calculate local authority proportions within each age and sex group. These (age, sex and local authority) proportions are used to redistribute the age and sex HOBI counts. This helps correct age-related biases in the unadjusted RAPID data, as described in Section 2 of our [Implementing new methods for estimating the international migration of British nationals, progress update: November 2025 article](#). This may upscale or downscale the age and sex distribution within each local authority to align with HOBI's overall known demographic structure.

Step 5: Asylum adjustment

This step adjusts asylum migration counts at local authority, age and sex level by proportionally redistributing individuals with missing local authority information across records where local authority information is available. This prepares the asylum data for integration into the overall non-British migration estimates.

Step 6: Combine totals

This step combines migration estimates from the EU+, non-EU+ and asylum datasets into a single set of counts for each migration flow, disaggregated by local authority, age and sex.

Step 7: Child emigration adjustment

This step estimates emigration for children in each local authority by applying a national child-to-adult emigration ratio to the number of adults emigrating from that local authority. The ratio is applied separately by sex. This means that male child emigration is estimated in proportion to male adult emigration and female child emigration is estimated in proportion to female adult emigration. This approach preserves the geographic distribution of adult emigration while compensating for the limited reliability of the available child emigration data.

Step 8: Constrain to long-term international migration totals

This step calculates a scaling factor by dividing the published national LTIM EU+ and non-EU+ estimates by the corresponding non-British totals produced in the previous steps. The scaling factor is then applied to the local authority age and sex counts so that the final subnational estimates sum to the national LTIM estimates. This ensures consistency between local-level estimates and published UK-level LTIM totals.

Step 9: Combine migration estimates

The non-British and British estimates are combined to produce total immigration and emigration estimates by age, sex and local authority for England, Scotland and Wales.

Non-British nationals method limitations

The current non-British method has several current limitations, which our continuous improvement work aims to address over time.

Student adjustment

The student adjustment is based on the estimated proportion of students in employment, calculated using a three-year average from the 2015/2016 to 2017/2018 academic years. These proportions may no longer reflect current student employment patterns.

Child migration data

The data sources used to estimate child migration are limited, particularly for emigration. The current child emigration adjustment assumes that children emigrate in proportion to adults of the same sex. However, this assumption may not fully reflect real migration behaviour, as the sex of the parent or adult migrant does not necessarily determine the sex of the child.

Asylum data

Asylum data for people with EU+ nationality do not currently include an assigned local authority, which results in an incomplete geographic distribution. To address this, EU+ asylum seekers are allocated proportionally across local authorities based on the distribution of non-EU+ asylum seekers. While this assumption may not reflect the true distribution of EU+ asylum seekers, their numbers are very small. This means the effect on the final local authority estimates is likely to be minimal.

EU+ and non-EU+ breakdowns

Some input datasets cannot distinguish between nationalities. As a result, these groups must be combined into overall non-British estimates in processing. This means that we assume the age and sex profiles of different groups of nationals are consistent. More specifically, PDS and NHSCR data do not include nationality information. These sources are used to address the undercounting of children, so the same child counts are currently applied to both EU+ and non-EU+ groups. This means the method effectively applies the available child counts to both nationality groups, rather than producing separate EU+ and non-EU+ child estimates from the source data.

4 . Method for British nationals estimates

Data sources

Subnational estimates for British nationals are largely produced using the Department for Work and Pensions's Registration and Population Interaction Database (RAPID) data only. This reflects the limited data availability for this group of migrants. There are fewer indicators of migration events for British nationals than for non-British nationals, mainly because British nationals are not subject to immigration controls.

The method uses three different versions of RAPID data for both immigration and emigration:

- unadjusted British nationals estimates (by local authority, age and sex)
- British nationals estimates with naturalisation adjustment (UK-level by age and sex)
- British nationals estimates with coverage adjustment (UK-level by age)

These data sources are all used to produce the headline long-term international migration (LTIM) British nationals estimates. We also use relevant published national LTIM estimates.

Unadjusted British nationals estimates (by local authority, age and sex)

Residency rules are applied to the RAPID data to derive preliminary immigration and emigration estimates that are used in the headline long-term international migration (LTIM) British nationals estimates. Data are aggregated by age, sex and local authority.

British nationals estimates with naturalisation adjustment (UK-level by age and sex)

Foreign nationals who obtain British citizenship are not always identifiable as British in RAPID after naturalisation, because nationality is not always updated in the RAPID dataset. A naturalisation adjustment, based on proportions derived from Census 2021 data, is applied to the unadjusted RAPID estimates to account for this.

British nationals estimates with coverage adjustment (UK-level by age)

After the naturalisation adjustment is applied, a coverage adjustment is applied using UK-level age distribution from Census 2021 to correct age-related biases, including overestimation of those in the 45 to 65 years age group and underestimation of children for immigration.

Full details on the British nationals methodology, application of residency rules to estimate immigration and emigration, and a description of the naturalisation and coverage adjustments are available in our [Implementing new methods for estimating the international migration of British nationals, progress update: November 2025 article](#).

Long-term international migration national estimates

We also use the national LTIM estimates of British nationals immigration and emigration to constrain the subnational estimates, which ensures consistency between UK and subnational estimates.

British nationals method

The method for producing subnational British nationals estimates (Figure 1) can be broadly divided into six steps.

Step 1: Organise the data

This step standardises the structure of all data sources, ensuring consistent column names, variable coding and data types. It also involves retaining only complete cases and updating local authority codes to align with requirements.

Step 2: Produce totals and validation outputs

This step calculates the total of British nationals using RAPID unadjusted data and derives proportional distributions to allocate these totals across local authority, age and sex. These proportions are used for quality assurance purposes.

Step 3: Constrain to Registration and Population Interaction Database for British nationals estimates with naturalisation adjustment

This step uses age-sex distributions (counts) from the naturalisation-adjusted RAPID estimates to redistribute local authority-level migration totals across age and sex. For each age-sex group, local authorities retain their relative shares (proportions) from the unadjusted RAPID estimates, but the totals are constrained to match the naturalisation-adjusted RAPID age-sex counts. This may increase or decrease estimates for particular age-sex groups within a local authority and aligns the overall age-sex profile with that of the naturalisation-adjusted RAPID estimates. This helps correct age-related biases in the unadjusted RAPID data, as described in Section 2 of our [Implementing new methods for estimating the international migration of British nationals, progress update: November 2025 article](#).

Step 4: Constrain to Registration and Population Interaction Database for British nationals estimates with coverage adjustment

This step uses the age profile from the coverage-adjusted RAPID estimates to redistribute local-authority-level migration totals across age. For each age group, local authorities and sexes retain their relative shares from the previous stage, but the totals are constrained to match the coverage-adjusted RAPID age counts. This may increase or decrease estimates for particular age groups within a local authority and aligns the overall age profile with that of the coverage-adjusted RAPID estimates. This aims to help correct known age-related biases in RAPID, as described in Section 2 of our [Implementing new methods for estimating the international migration of British nationals, progress update: November 2025 article](#).

Step 5: Constrain to long-term international migration estimates

This step scales the subnational British nationals estimates to match the published national LTIM estimates for British nationals. The scaling factor is applied to the local authority, age and sex counts so that the final subnational estimates sum to the LTIM headline totals. This ensures consistency between local authority estimates and published UK-level LTIM totals.

Step 6: Combine migration estimates

The non-British and British estimates are combined to produce total immigration and emigration estimates by age, sex and local authority for England, Scotland and Wales.

Limitations

The current British nationals method is still in development and has several limitations, which our continuous improvement work aims to address over time.

Naturalised migrants

The method assumes that the geographic distribution of naturalised migrants is the same as that of British nationals. This assumption may not hold in practice.

Children in the Registration and Population Interaction Database

In RAPID, all children aged 16 years or under appear as British nationals by default. Children identified as being born outside the UK to foreign parents are excluded to partially correct this.

Emigration data

Emigration data are limited, particularly for children. Future research could explore whether additional sources could be used to improve the coverage.

Coverage adjustment

This adjustment is currently by age only. We aim to update this to include age and sex in our next release.

Naturalisation assumptions

This adjustment uses Census 2021, but a timelier data source could strengthen the validity of this assumption.

Alignment with long-term international migration age-sex breakdowns

There are known differences between national LTIM estimates and the subnational estimates, which are caused by continuous improvement of each method. The subnational British estimates match the LTIM headline total estimates, but the available national LTIM age and sex breakdowns do not align.

We have developed these new methods for disaggregation of British nationals to align with the new methods to estimate these groups at a UK level, published for LTIM for the first time in November 2025. We have tested and quality assured that these methods work in practice. Since November, there has been development in national LTIM estimates to provide estimates of British nationals by age groups and sex. These were published for the first time in May 2026. We will aim to align the age and sex profile in the method in the future.

5 . Estimating uncertainty in subnational long-term international migration estimates

We recognise that our long-term international migration (LTIM) disaggregated estimates are subject to uncertainty. We use a simulation-based approach to quantify the uncertainty associated with the main components of the estimation process.

This approach is similar to the method used to quantify uncertainty in our [headline LTIM estimates](#). The LTIM disaggregation process is repeated 1,000 times, with selected sources of uncertainty incorporated into each iteration. For each source of uncertainty, we generate plausible alternative values through resampling methods, creating a distribution of possible outcomes.

For non-British uncertainty estimation of LTIM estimates by single year of age, sex, and local authority, we currently incorporate three sources of uncertainty, which are:

- the headline LTIM estimates
- the ratio of students in employment
- the geographical distribution of migrants across local authorities

Headline long-term international migration uncertainty

The headline LTIM estimates are subject to uncertainty. We incorporate this uncertainty using the simulated estimates produced as part of the UK-level LTIM uncertainty estimation process. This ensures that uncertainty in the national LTIM estimates is propagated through the disaggregation methodology.

Student employment ratio uncertainty

We simulate 1,000 plausible student employment ratios for each local authority. These simulations are based on the observed mean and variance of employment ratios during the 2015/2016 to 2017/2018 academic years. This reflects uncertainty in the proportion of students who are assumed to be in employment.

Geographical distribution uncertainty

We also simulate 1,000 plausible geographical distributions of international migrants across local authorities. This reflects uncertainty in the estimated allocation of migrants to different areas. The simulations are generated using the observed proportional distribution of migrants, treating the proportions as probabilistic outcomes from which alternative geographical distributions can be sampled.

Combining sources of uncertainty

The three sources of uncertainty are combined within a single simulation framework. For each of the 1,000 iterations, new values are sampled for each uncertainty component and the full LTIM disaggregation process is repeated. The resulting distribution of estimates is then used to produce uncertainty intervals for LTIM estimates by age, sex, and local authority.

British nationals

For estimates relating to British nationals, we currently incorporate uncertainty from the headline LTIM estimates only. Uncertainty associated with the student employment ratio is not relevant for British nationals and geographical distribution is not currently included

6 . How our methods have changed over time

Methodology for previously published subnational estimates

The previous [Long-term international migration \(LTIM\) methodology](#) for UK-level estimates for British nationals relied on the [International Passenger Survey \(IPS\)](#). The IPS was a long-running UK survey that collected information from passengers entering and leaving the country through ports and airports. However, it was based on a relatively small sample and captured passengers' intended length of stay, rather than their actual duration of stay. Since 2024, the arrivals survey was stopped and the IPS has focused on departures only.

The previous methodology for subnational LTIM estimates for British nationals was therefore based on two main sources of information:

- Census 2021 for England and Wales, which captured arrivals intending to stay for more than 12 months
- Great Britain headline estimates for England and Wales, which were calculated using average IPS proportions from 2011 to 2019

This approach introduced more uncertainty into the estimates because it relied partly on survey-based assumptions and intended, rather than observed, migration behaviour.

A further change in the [revised LTIM methodology](#) for the UK-level was moving from the Department for Work and Pensions's Registration and Population Interaction Database (RAPID) to Home Office Borders and Immigration (HOBI) data for estimating EU+ nationals. This reflects the requirement for EU citizens to have permission to live in the UK, either through a visa or through status granted under the EU Settlement Scheme, that was introduced from January 2021. The move to HOBI data improves consistency with the LTIM non-EU+ estimates, which are also based on observed travel patterns.

Before the move to HOBI data for EU+ UK-level LTIM estimates, the subnational method was similar to the method currently used for the non-British subnational estimates but without the constraint to HOBI data that was not available at that time. The new method now in place also added a constraint to the UK-level LTIM headline estimates to ensure the final totals by age, sex and local authority aligned with the LTIM.

For EU nationals, estimates of immigration were disaggregated using the Personal Demographic Service (PDS) for people aged under 18 years and RAPID adjusted for under coverage using the Higher Education Statistics Agency (HESA) data for students not in employment. This adjustment was tailored for each local authority to account for areas that do not have a higher education institution.

Emigration estimates for EU nationals were disaggregated in a similar way, except for people aged under 18 years. For this group, we create national child-to-adult emigration ratios by dividing national estimates of child emigrants by age and sex by the total number of adult emigrants by sex. We then multiply these ratios by the total number of adult emigrants by sex and local authority. This generates estimates of child emigration by age, sex, and local authority.

For non-EU nationals, UK-level estimates of immigration and emigration were produced solely from HOBI data as they are now, which includes age and sex. The same method for EU nationals was applied to provide geographical distributions for non-EU nationals. However, the age and sex distribution from RAPID, HESA, and PDS were then re-constrained to the age and sex totals from HOBI to ensure consistency between the two estimates.

Historic methods and comparability of data

A summary of some of the main differences between the most recent methods and data back to 2021 are outlined in Section 12: Summary of historic methods in our [Population estimates for England and Wales, mid-2024: methods guide](#).

7 . Future developments

As part of the continuous improvement of these statistics set out in our [Improving population estimates for England and Wales supporting methodology article](#), we are currently focusing on improving important input data sources used for the estimates that have been identified as current limitations. The research is in early stages of exploration and will focus on better coverage and estimation for migration of children aged under 18 years and adults in higher education.

More details of the work are published in our [International migration research, progress update: April 2026 article](#). Progress of this work will be reported in future editions of this progress update article.

8 . Definitions

EU member states

The current EU member states are Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden.

9 . Related links

[Population estimates for England and Wales: mid-2025](#)

Bulletin | Released 29 July 2026

National and subnational mid-year population estimates for England and Wales by administrative area, age and sex. A full set of UK population estimates will follow later in the year.

[Long-term international migration, provisional](#)

Bulletin series | Released bi-annually

UK long-term international migration. Includes breakdowns by age, sex, nationality and reason. These are official statistics in development.

[Provisional long-term international migration estimates: technical user guide](#)

Methodology | Last revised 21 May 2026

Methodology used to produce our provisional long-term international migration estimates.

[Improving population estimates for England and Wales](#)

Article | Released 29 July 2026

An outline of our improvement plan for mid-year population estimates.

[Mid-2025 population estimates for Scotland](#)

Statistical release | Released 14 July 2026

Population estimates from National Records of Scotland for mid-2025.

10 . Cite this page

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